Northern Middlesex Stormwater Collaborative



2013 Community Innovation Challenge Grant
Administered by the MA Executive Office of Finance & Administration
FINAL REPORT - Submitted June 6, 2014

Prepared by:
Northern Middlesex Council of Government
40 Church Street, Suite 200
Lowell, MA

Participating Communities and entities (10):

Northern Middlesex Council of Governments (Lead), City of Lowell, and the Towns of Billerica, Chelmsford, Dracut, Dunstable, Pepperell, Tewksbury, Tyngsborough and Westford

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June 6, 2014

Glen Shor, Secretary of Administration and Finance Community Innovation Challenge Grant Program Executive Office for Administration and Finance Massachusetts State House, Room 373 Boston, MA 01233

Dear Secretary Shor:

I am pleased to submit the Final Report for Northern Middlesex Council of Governments' (NMCOG) Community Innovation Challenge Grant project. Funding provided by the grant has been used to form the Northern Middlesex Stormwater Collaborative (NMSC) comprised of the all nine NMCOG communities: Billerica, Chelmsford, Dracut, Dunstable, Lowell, Pepperell, Tewksbury, Tyngsborough and Westford. The chief administrative officer in each community has signed an MOU formally establishing the Collaborative.

Over the course of the grant period, the NMSC implemented a common public outreach and education program, regionalized stormwater mapping activities, coordinated regional procurement, attended community events, and conducted workshops and training sessions for municipal staff, boards and officials.

This grant has eliminated many duplicative activities related to stormwater management among the collaborating municipalities, and has maximized the use of personnel and financial resources by consolidating and coordinating responsibilities that were previously dispersed among many different entities. We feel the collaborative model can serve as a guide for other regions hoping to realize similar savings and efficiencies while striving to meet Phase II of the Clean Water Act Stormwater Management Regulations. Strong participation from the Advisory Board members who represent each municipality has ensured that the program will effectively continue into the future, providing valuable benefits to each community.

We would like to thank Governor Patrick and the Executive Office for Administration and Finance for their ongoing support of this important program, and for continuing to encourage and incentivize innovation and regionalization. We look forward to continuing our partnership.

Sincerely,

Beverly Woods Executive Director

Beverly Woods

Executive Summary

The Northern Middlesex Stormwater Collaborative (NMSC) was established over the past year using Fiscal Year 2013 CIC funding. The NMSC utilizes a regional approach to address the public education, procurement, management, administrative, and mapping tasks necessary to meet Environmental Protection Agency (EPA) requirements and implement municipal stormwater management plans. The intent of the collaboration is to utilize new approaches to solve stormwater problems across the region in a way that reduces costs for local governments and taxpayers, and promotes regional communication and cooperation. The goal is to effectively manage stormwater and improve water quality, while engaging in resource sharing among local governments, in order to keep costs at a minimum, and improve the quality of service provided to residents.

During this grant period, the Collaborative implemented a common public outreach and education program, regionalized stormwater mapping activities, coordinated regional procurement activities and developed workshops and training sessions for municipal staff, boards and officials. Through the establishment of common programs for all nine communities, each community has been relieved of the burden of creating, implementing, maintaining and managing separate but similar programs. Overall, an estimated 192 duplicative activities have been eliminated. This collaborative model can serve as a guide for other regions hoping to realize similar savings and efficiencies, while striving to meet Phase II of the Clean Water Act Stormwater Management Regulations.

Section I: Partner Communities

NMCOG has taken the lead role in managing and implementing this program by conducting meetings, developing the Memorandum of Understanding, coordinating advisory board appointments, promoting social media, organizing trainings, assisting with grant writing, attending community events and initiating regional procurement.

The collaborative is comprised of all nine communities in the jurisdiction of the Northern Middlesex Council of Governments (NMCOG) including Billerica, Chelmsford, Dracut, Dunstable, Lowell, Pepperell, Tewksbury, Tyngsborough and Westford. Each community has signed a Memorandum of Understanding, appointed at least two Advisory Board representatives and is an active participant in the collaborative. Advisory Board representatives attend meetings, review documents and provide feedback/guidance on the NMSC's programs and initiative. Member communities also organize and participate in local events and trainings, utilize educational and outreach materials, and participate in regional procurement.

Section 2: Goals

The goal of the Northern Middlesex Stormwater Collaborative was to establish and implement a regional stormwater collaborative to address stormwater issues across nine municipalities, using an innovative approach that reduces costs for municipalities and fosters regional cooperation and coordination. Through the implementation of this program, communities are now addressing stormwater issues across municipal boundaries, utilizing a more consistent message and efficiently managing their stormwater programs through resource sharing. The first year of this program has been highly successful and all project goals outlined in the initial grant application have been achieved.

Section 3: Implementation Plan

Quarter 1

During the first Quarter, the NMSC held its first two meetings, and NMCOG drafted the Memorandum of Understanding and initiated the process of advisory board appointments. The NMSC Facebook and Twitter page were created, and the first stormwater training session was conducted.

Quarter 2

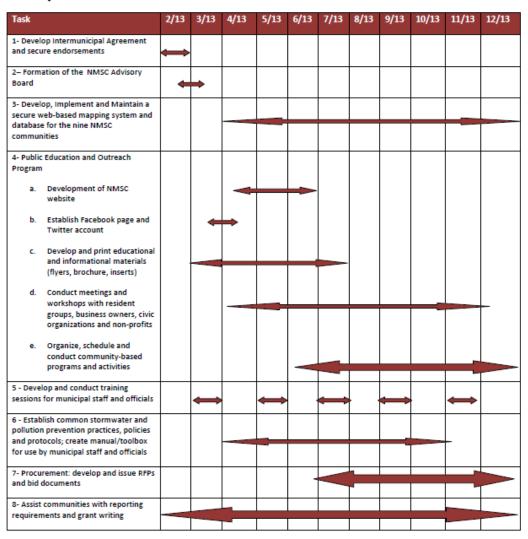
During Quarter 2, NMCOG finalized the Advisory Board appointments, inventoried stormwater GIS data, issued a solicitation for website design services, and compiled educational and print materials. Feedback was solicited from the municipalities regarding their needs for regional procurement and an RFP was issued for an engineering firm to draft regional procurement specifications. NMCOG also completed a grant application on behalf of the Collaborative, and held two NMSC Meetings and one training session.

Ouarter 3

During Quarter 3, NMCOG finalized the stormwater mapping system for the nine NMSC communities, completed the NMSC website, created three educational templates and participated in four community events. In addition, an EnviroScape model was purchased and used for two education events. Two stormwater workshops for municipal officials and staff were also held during this quarter.

Nobis Engineering was selected to provide engineering services related to regional procurement and stormwater training. NMCOG continued to assist towns with identifying grant opportunities, including opportunities through CIC, the Great American Rain Barrel Company and Toxics Use Reduction Institute (TURI) at UMass Lowell. The overall project timeline is shown on the next page.

Project timeline:



Section 4: Budget

The original budget for the project, as outlined in the grant application, was \$250,000 and was divided into eight categories. These categories included developing the Intermunicipal Agreement, forming the Advisory Board, developing a unified GIS map, creating a Public education and outreach program, establishing common stormwater and pollution prevention practices, policies and protocols, procurement and grant writing. This budget is shown in the table on the following page under the column labeled "Original Budget".

The total amount of the grant award was \$98,000, which required a budget amendment, as shown in the column labeled "Budget Amendment". In order to adjust the budget, it was necessary to

eliminate the development of common pollution prevention practices, remove the consultant component of the GIS mapping task, and decrease the number of trainings that would be held.

Item	Original Budget	Amended Budget
Task 1: Development of agreement	\$1,500	\$1,500
Task 2: Formation of advisory board	\$1,500	\$1,500
Task 3: Development of unified map	\$75,000	\$10,000
Task 4: Public education and outreach (including website)	\$75,000	\$50,500
Task 5: Training	\$26,500	\$8,500
Task 6: Common Pollution Prevention Practices; Manual/Toolbox	\$37,000	\$0
Task 7: Procurement	\$24,500	\$19,000
Task 8: Grant Writing	\$9,000	\$7,000
Total	\$250,000	\$98,000

The amended budget was adhered to throughout the project and no further amendments were needed.

Section 5: Challenges and Solutions

The development of the NMSC proved to be somewhat time consuming. To initiate the Memorandum of Understanding a draft document was developed and sent to the chief administrator in each community. The document was revised based on feedback provided and circulated for signature. During this time period, it was crucial to follow-up individually with each community to receive responses in a timely manner – a technique that was useful throughout the duration of the project. Advisory Board appointments also took a great deal of coordination. In most cases, appointment needed to be approved by the Boards of Selectmen, which took time. In our role as coordinators, NMCOG drafted appointment letters for each community and conducted individual follow-ups to ensure that the process moved along.

After the general structure of the group was established, it became clear that coordinating all nine communities would require follow-up and constant communication. NMCOG took the lead role in coordinating meeting, as well as in following up on all project tasks. To make scheduling meetings more efficient we created a master contact list, a master attendance list and utilized

Doodle polling, an online polling program. Remaining organized was a crucial component to effective coordination of this project.

NMCOG committed to assisting municipalities with community-based programs and activities. However, after initiating work under this task, we soon found that most of the activities occurred around Earth Day in April and May, which was after the end of the grant period. To accommodate these activities, NMCOG requested a grant extension through May 31st, which allowed us to assist municipalities with the spring community-based events including Household Hazardous Waste Days and Earth Day events.

Section 6: Outcomes

There are four measureable outcomes relative to this project, as shown in the chart on the next page. A description of each outcome is included in this section.

Outcome 1 involved the signing of Memorandum of Understanding to formally establish the Northern Middlesex Stormwater Collaborative (NMSC), and also included the establishment of the NMSC Advisory Board. All participating municipalities have signed the MOU and have appointed two or more Advisory Board Members.

Outcome 2 involved the implementation of a common public outreach and education program, therefore allowing municipalities to share educational materials and social media sites, and to conduct joint workshops and trainings. The NMSC has met every six weeks to discuss the core education program, and engage in discussion, with eight total NMSC meetings held during this grant period. Education and outreach activities that occurred included training sessions for municipal staff and boards, as well as community-based activities, as described below:

- Training sessions for municipal staff and boards:
 - Training Session #1: Frederick Civian, MassDEP's Stormwater Coordinator, presented on the anticipated New EPA Phase II MS4 Rules for Massachusetts, and discussed what communities need to know about the coming regulations.
 - Training Session #2: Nobis Engineering conducted a Stormwater Workshop for Local Boards and Officials, which included a presentation from EPA.
 - Training Session #3: Nobis Engineering conducted an Illicit Discharge and Elimination (IDDE) and Good Housekeeping Training for Municipal Staff.
- Community-based activities:
 - Chelmsford's Household Hazardous Waste (HHW) Day-educational brochures were distributed to hundreds of Chelmsford residents attending the events.
 - The Dracut Garden Club's Earth Day Celebration Staff manned a table and provided stormwater education for children (using the EnviroScape model) and educated parents via a leaflet and educational posters.

- Tyngsborough and Dunstable HHW Day- educational brochures were distributed to hundreds of Tyngsborough and Dunstable residents attending the event.
- Westford's Healthy Lakes and Ponds 101-educational materials were distributed to event attendees.

NMCOG tailored the stormwater brochures for each community event, and distributed more than 600 brochures in total.

PROJECT GOAL	MEASURE	CURRENT YEAR	PRIOR YEAR	TREND	TARGET	STATUS	COMMENTS
	% of participating municipalities will sign an intermunicipal agreement to formally establish the collaborative				100%	•	All participating municipalities have signed the inter-municipal agreement and have appointed two or more Advisory Board Members.
To develop a regional storm water management program.	% of participating communities will be involved in a common public outreach and education program				100%	•	All municipalities share a website, Facebook and Twitter accounts, educational templates, an EnviroScape model, Stormwater educational posters and door hangers, and participate in joint workshops and training sessions.
	# of stormwater mapping activities conducted by the program				1 secure map	•	All available stormwater data has been mapped together on one map, which is accessed via a secure website for member communities.
	# of duplicative activities eliminated through the establishment of this collaborative				200	•	To date, we have eliminated approximately 192 duplicative activities as a result of this grant.
STATUS LEGEND	OFF TARGET:	CLOSE TO TARGET	V	ON TARGET:		NOT APPL	ICABLE:

Outcome 3, regionalization of stormwater mapping activities, has been completed. To date, all available stormwater data has been mapped on a secure website for member communities. The map includes features such as outfalls, catch basins, manholes, open channel conveyances, headwalls and flared end sections, detention ponds, drainage pipes, culverts, open channels, curbing, basins, drainage areas and receiving water bodies. The map website is listed in the references section of this document, however, a user name and password is required to access the data. It should be noted that the communities of Pepperell and Dunstable do not have their stormwater data mapped using GIS as they were not subject to an MS4 permit in the past. Thus, there is no data for these two communities shown on the map as it is not available yet. As the data becomes available, it will be added to the map.

Outcome 4, elimination of duplicative activities related to stormwater management, has been achieved through implantation of the following activities:

- Development of one (1) mapping system
- Development of one (1) stormwater website, one (1) Facebook Account and one (1) Twitter account
- Compilation of three (3) shared educational templates and compilation of one (1) database of pre-existing educational materials
- Creation of three (3) trainings
- Promotion of five (5) workshops
- Purchase of one (1) EnviroScape
- Sharing two (2) stormwater posters for education and outreach events
- Development of two (2) regional procurement solicitations for catch basin cleaning services and water laboratory testing services
- Assistance with three (3) grant applications

If each of these 24 activities were undertaken for each of the nine member communities individually, it would result in 216 activities. Therefore, by only undertaking each of these activities only once, we have eliminated approximately 192 duplicative activities as a result of this grant. This results in costs savings, as well as the saving of time and resources for each municipality.

Conclusion

The formation of the Northern Middlesex Stormwater Collaborative has reduced duplication of effort and maximized the use of personnel and financial resources by consolidating and coordinating responsibilities that were previously dispersed among several different entities. Through the establishment of common programs that can be used by all nine communities, we have relieved each community from the burden of creating, implementing, maintaining and managing separate but similar programs. For example, municipal staff time will no longer be required to produce public outreach materials, resulting in reduced costs.

Successful implementation was due to the strong collaboration efforts between NMCOG and the nine municipalities. The Advisory Board member's attendance record was extremely strong, which contributed to project success and the high quality of deliverables produced. Strong collaboration with our project subcontractors also contributed to project success.

What has been gleaned from this regional collaborative is relevant and applicable to other regions across the state. For example, recently the Merrimack Valley Planning Commission decided to establish a stormwater collaborative among several of its communities, in part based on the success of the NMSC. NMCOG staff has shared materials and guidance with MVPC, and offered its assistance to the Merrimack Valley collaborative. Other regions can visit the website to learn more about our process and create their own stormwater collaborative. Through replication, the state's municipalities will benefit from improved water quality, a stronger public outreach effort with a more consistent message, more efficient administration and implementation of stormwater management programs, and consistent procurement practices, policies and procedures.

Contact Information

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Lowell, MA 01852

Email: jdononvan@nmcog.org Phone: (978) 454-8021, ext. 116

References

NMSC Website
NMSC Facebook Page
NMSC Twitter Page
NMSC web-based GIS map

Resources

For copies of our regional procurement documents and materials from our workshops and trainings, please visit our website, or contact the Northern Middlesex Council of Governments. Copies of the signed Memorandum of Agreement, door hanger template and stormwater brochure are provided below and are also available on our website.

Web Resources

Central Massachusetts Stormwater Coalition

Stormwater Pollution Prevention Plan Guidance and Other Helpful Resources for Construction

Activities

Think Blue Massachusetts

Stormwater Matters (SuASCO)

Town of Westford stormwater

Town of Chelmsford stormwater

Town of Pepperell Water Division

Town of Tewksbury Stormwater Management

US EPA Webcast Series Stormwater 101

Charles River Watershed Association Stormwater Page

Inter-municipal Agreement

Memorandum of Understanding

Between the municipalities of Billerica, Chelmsford, Dracut, Dunstable, Lowell, Pepperell, Tewksbury, Tyngsborough and Westford, and the Northern Middlesex Council of Governments to establish the NORTHERN MIDDLESEX STORMWATER COLLABORATIVE

Purpose:

The purpose of this Memorandum of Understanding (MOU) is to establish the Northern Middlesex Stormwater Collaborative through a formalized agreement by and between the municipalities of Billerica, Chelmsford, Dracut, Dunstable, Lowell, Pepperell, Tewksbury, Tyngsborough, and Westford, and the Northern Middlesex Council of Governments (NMCOG).

By signing this agreement each party agrees to work cooperatively to address stormwater pollution and improve water quality through increased coordination, collaboration and communication on a regional level. This MOU does not create enforceable legal obligations, but is an expression of intent by the signatories to work as partners on stormwater management issues of common interest.

Whereas, NMCOG works with its member communities to support and enhance environmental protection, and provides technical assistance in facilitating and implementing projects that further the interests its member communities and the overall region;

Whereas, NMCOG has received Community Innovation Challenge Grant funding to assist its member communities in establishing and implementing the Northern Middlesex Stormwater Collaborative:

Whereas, the municipalities of Billerica, Chelmsford, Dracut, Dunstable, Lowell, Pepperell, Tewksbury, Tyngsborough and Westford operate within separate jurisdictional boundaries as outlined in the State Constitution, while stormwater and water quality planning and initiatives are most efficiently and effectively conducted through actions that cut across individual municipal boundaries; and

Whereas, the nine municipalities and NMCOG desire to protect, manage and enhance water quality and water resources throughout the region to the extent practicable, the parties hereby agree to establish the Northern Middlesex Stormwater Collaborative;

Therefore, the parties agree to the following:

NMCOG and the nine participating municipalities enter into this Memorandum of Understanding (MOU) to establish and implement a regional stormwater collaborative, to address stormwater issues using an innovative approach that conserves financial resources and fosters intermunicipal cooperation and coordination. The goal of the Collaborative is to effectively manage stormwater and improve water quality, engage in resource sharing among local governments, and improve the quality of service provided to residents.

Accordingly, NMCOG and the nine participating communities operating under this MOU hereby form the Northern Middlesex Stormwater Collaborative to undertake many of the public education, procurement, management, administrative, and mapping tasks that are necessary for implementing municipal stormwater management plans and meeting EPA requirements. The collaborative will focus on the following initiatives:

- Education and Outreach: The NMSC will create a comprehensive education, outreach
 and public participation program to serve the needs of all nine municipalities. This
 program will inform residents and businesses of the problems associated with non-point
 source pollution. Activities include identifying the daily activities that contribute to
 pollution, and outlining ways in which residents and businesses may modify their
 behavior to reduce such pollution.
- GIS Mapping: The regional collaborative will build upon the mapping work already completed under the existing MS4 permit by creating a regional GIS-based map. Upon release of the new EPA MS4 Permit for Massachusetts, the collaborative will work together to address new EPA requirements as efficiently as possible.
- Workshops and Training: The collaborative will work to develop common stormwater
 management and pollution prevention practices, protocols and policies, which can be
 employed by each community. These include the proper storage of materials and
 chemicals, best inspection practices, de-icing practices, water sampling protocol, and spill
 prevention and cleanup. The collaborative will also focus on cutting edge best practices
 in stormwater management, such as the use of green infrastructure.
- Regional Procurement and Grant Writing: The collaborative will focus on the joint procurement of equipment, materials, and services. Engineering, consulting, and laboratory services procured may include outfall inspection, outfall testing and water quality monitoring; design of new and upgraded stormwater infrastructure; inventorying of impervious surfaces; and construction site inspection and management. Communities could generate savings by jointly procuring services such as street sweeping and catch basin cleaning services, and the disposal of materials resulting from street sweeping and catch basin cleaning. The collaborative will seek additional resources for the stormwater collaborative and local stormwater management programs through grant writing.

- Northern Middlesex Council of Governments (NMCOG): NMCOG will provide technical assistance to the Northern Middlesex Stormwater Collaborative, and will serve as its administrative staff.
- Municipalities of Billerica, Chelmsford, Dracut, Dunstable, Lowell, Pepperell, Tewksbury, Tyngsborough, and Westford: The nine municipalities described above, will actively participate in the collaborative through joint programs and common stormwater practices at the regional level, utilizing a shared approach that includes best stormwater management practices, policies and protocols. Based on availability of funding, each community will continue to fund capital improvements to its stormwater infrastructure, including equipment, maintenance, materials and services. However, cost savings will be realized through economies of scale and increased buying power leveraged through joint procurement at the regional level.

Organizational Structure:

The Collaborative will be overseen by an Advisory Board with equal representation from each of the nine participating communities. The Chief Administrative Officer in each community shall appoint two representatives to serve on the NMSC Advisory Board. The appointed representatives shall participate in NMSC meetings, and guide the initiatives undertaken by the Collaborative as outlined in this MOU.

Changes to the MOU:

Amendments to this MOU may be developed and implemented by mutual written agreement of the signatories at any time. A party may terminate its participation in this agreement after providing a 30-day written notice to the other parties to the agreement without penalties or liabilities.

Effective Date of the MOU:

This MOU shall become effective on August 1, 2013 and will remain in effect for all parties unless and until it is formally terminated.

Signatories:	
John Curran, Town Manager, Billerica	Date
Paul Cohen, Town Manager, Chelmsford	Date

Dennis Piendak, Town Manager, Dracut	Date
Daniel F. Devlin, Chairman, Board of Selectmen, Dunstable	Date
Bernard Lynch, City Manager, Lowell	Date
John Moak, Town Administrator, Pepperell	Date
Richard Montuori, Town Manager, Tewksbury	Date
Michael Gilleberto, Town Administrator, Tyngsborough	Date
Jodi Ross, Town Manager, Westford	Date
Reverly Woods Executive Director NMCOG	Date

Advisory Board Members

Billerica

Richard Berube, Director of Public Health Derek Doyle, Town Engineer

Chelmsford

Gary Persichetti, DPW Director Stephen Jahnle, Town Engineer

Dunstable

Jeff Rider, Town Engineer Michael Martin, Roads Commissioner

Dracut

Mike Buxton, DPW Director Mark Hamel, Town Engineer

Lowell

Lisa DeMeo, City Engineer Ralph Snow, Public Works Commissioner Mark Young, Executive Director of the Lowell Regional Waste Water Utility

Pepperell

Kenneth Kalinowski PE, Town Engineer and DPW Director Peter Shattuck, Highway Superintendent

Tewksbury

Michele Stein, Town Engineer Brian Gilbert, Superintendent of Public Works

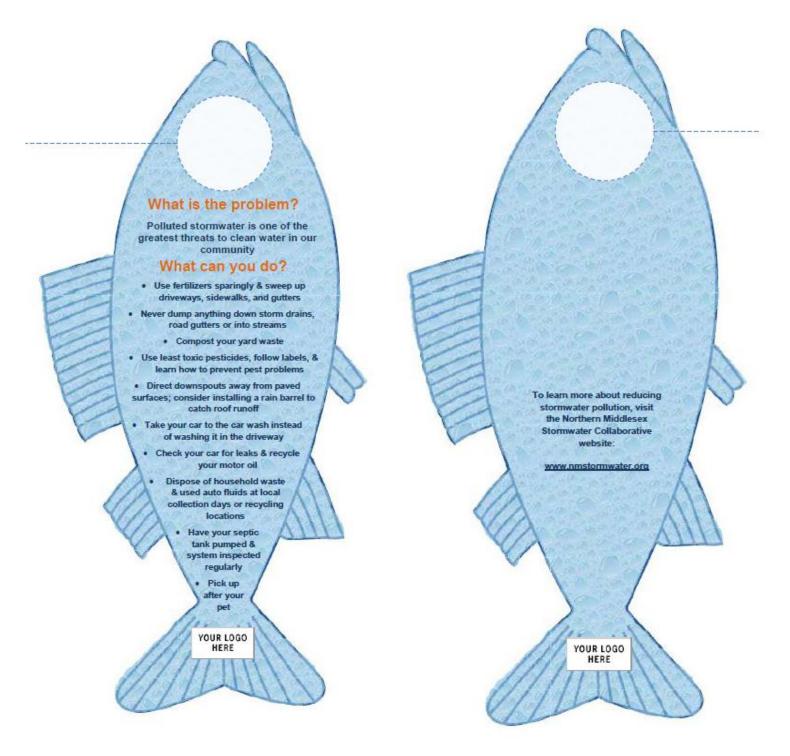
Tyngsborough

Matt Marro, Conservation Director Nina Nazarian, Assistant Town Administrator

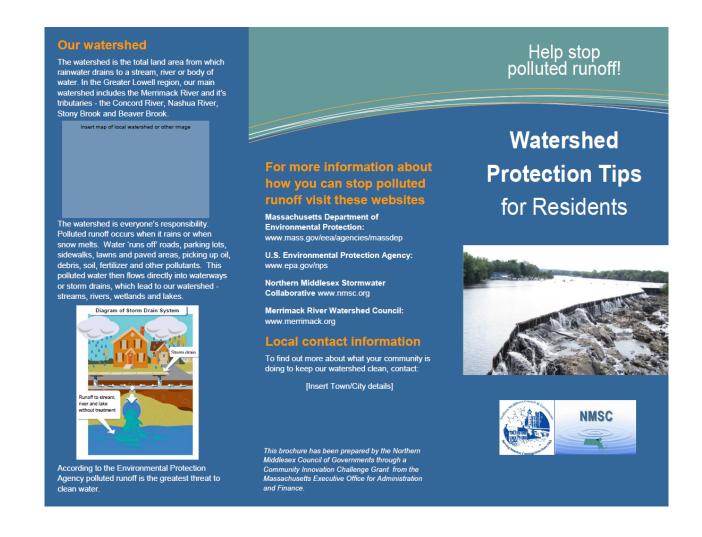
Westford

Paul Starratt, Town Engineer Richard (Chip) Barrett, Highway Superintendent

Door hanger Template



Stormwater Brochure



How can you make a difference?

It's up to all of us to keep our streams, rivers and takes clean. Polluted runoff can be easily reduced if everyone takes simple steps in their everyday lives, such as properly disposing of waste or minimizing use of lawn fertilizers.

At Home

Household Chemicals

- Take all unwanted household hazardous waste (HHW) such as paint, oils and toxic cleaning products, to local HHW events.
- Call XXX-XXX-XXXX for more information.

Repairs & Construction

- Make sure pollutants don't leave your property during remodeling or repair projects.
- Before work begins, locate the nearest storm drains and protect them from debris and other material.
- Discuss wastewater disposal options with your contractor.



In the yard

Fertilizers and Pesticides

- Use fertilizer sparingly and as directed on the label.
- · Store fertilizers and pesticides under cover.

Lawn and Garden

- Avoid overwatering your lawn.
- Water your lawn after dusk or early in the day.
- Clear, remove and dispose of any debris, (including leaves and grass cuttings), in your yard waste container or by composting
- · Install a rain barrel to collect rainwater.



Pool/Spa

- Never dispose of acid wash wastewater, pool filter backwash or other pool cleaning wastewater into the storm drain.
- Before a pool is drained, all chlorine must be removed and your town may require a permit.

Pet Care



- Always pick up after your pet and dispose of pet waste properly.
- Flushing dog waste down the toilet is the best disposal method.
- For cats, dispose of litter in the trash.

Your Car

Washing

- . Take your car to a commercial car wash.
- If you do wash your car at home, use as little water as possible and a phosphate free, biodegradable detergent. Consider washing your car on the lawn or other unpaved area.



Car Fluids

- Use drip pans to catch all oil, brake, and transmission fluids.
- Clean up any spills with absorbent materials like kitty litter, sand or rags.
- Take all waste material to local HHW collection events.
- Recycle used oils and automobile fluids at participating service stations.



 Don't dump these chemicals down storm drains, into road gutters, on the ground, or dispose of them in your trash.